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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/633,275	08/04/2000	Wieslaw Jerzy Szajnowski	0054-0217P-SP	2168
7590 02/07/2006 Birch Stewart Kolasch & Birch LLP P O Box 747 Falls Church, VA 22040-0747			EXAMINER AHN, SAM K	
			ART UNIT 2637	PAPER NUMBER

DATE MAILED: 02/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/633,275

Applicant(s)

SZAJNOWSKI, WIESLAW JERZY

Examiner

Sam K. Ahn

Art Unit

2637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-6 and 9-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,4-6,9,10 and 13-17 is/are allowed.
- 6) ☒ Claim(s) 3,11,12 and 18-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see p.5-7, filed 11/14/05, with respect to the rejection(s) of claim(s) 22 and 23 under 103 (a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Schulz and Glazer.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 3, 18 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glazer US 4,513,386 in view of Higuchi et al. US 6,167,037.

Regarding claims 3 and 22, Glazer teaches a method and an apparatus for generating a random binary waveform containing events which occur at random intervals, comprising: a physical noise source (11 in Fig.2) producing a random output signal (output of 12); a first level detector (13) for level-detecting said random output signal using a first threshold (level V_1) to derive a first preliminary signal containing first events occurring asynchronously at random intervals (see B in Fig.3 as output of the first level detector); a second level detector (14 in

Fig.2) for level-detector for level-detecting said random output signal using a second different threshold (V_0) to derive a second preliminary signal containing second events occurring asynchronously at random intervals (note col.4, lines 23-37); and producing a random binary waveform (output of 27, V_{XOR}) in which at least said first and second events are interspersed from at least said first preliminary signal and said second preliminary signal (see J in Fig.3).

However, Glazer does not explicitly teach wherein random binary waveform is produced by means for multiplying for multiplying said first and second preliminary signals.

Higuchi teaches means for multiplying for multiplying (see 2 in Fig.3) said first and second preliminary signals (P1 and Spread Modulation Signal Input).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to incorporate the teaching of Higuchi in the system of Glazer by composing the EX-OR gate of Glazer of multipliers for the purpose of effectively calculating binary values, as taught by Higuchi (note col.2, lines 23-25). Thus, one skilled in the art would analyze that the EX-OR gate has a function of multiplying.

Regarding claim 18, Glazer further teaches wherein the number of preliminary signals, including said first and further preliminary signals, is equal to 3 or 4 (see V_{1s} , V_{2s} and V_{0s} in Fig.2).

3. Claims 11,12 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schulz US 4,905,176 in view of Higuchi et al. US 6,167,037.

Regarding claims 11 and 23, Schulz teaches a method and an apparatus for generating a random binary waveform containing events which occur at random intervals, comprising: a physical noise source (40,40' in Fig.4) producing a random output signal; means for deriving (A1, A2, A3), from said random output signal, a first preliminary signal (E) containing first events occurring asynchronously at random intervals; delay means (A0, delay stage, note col.6, lines 26-28) for delaying (thus second preliminary signal is delayed) said random output signal to derive a second preliminary signal (C) containing second events occurring asynchronously at random intervals; and producing a random binary waveform from said first and second preliminary signals in which at least said first and second events are interspersed (output of 44, see B in Fig.11B and note col. 7, lines 19-23).

However, Schulz does not explicitly teach wherein random binary waveform is produced by means for multiplying for multiplying said first and second preliminary signals.

Higuchi teaches means for multiplying for multiplying (see 2 in Fig.3) said first and second preliminary signals (P1 and Spread Modulation Signal Input).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to incorporate the teaching of Higuchi in the system of Schulz by

composing the EX-OR gate of Schulz of multipliers for the purpose of effectively calculating binary values, as taught by Higuchi (note col.2, lines 23-25). Thus, one skilled in the art would analyze that the EX-OR gate has a function of multiplying.

Regarding claim 12, as previously explained, Schulz teaches generating a time-delayed version (C) generated from the physical noise source having pseudo-random number sequence (note col.2, lines 27-31, wherein the sequence is well-known to have correlation function that is substantially zero).

4. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Glazer US 4,513,386 in view of Higuchi et al. US 6,167,037 and Zscheile, JR. et al. US 4,429,310 (Zscheile).

Regarding claim 19, Glazer in view of Higuchi teach all subject matter claimed, as applied to claim 3. However, Glazer in view of Higuchi do not explicitly teach a method of detecting objects comprising measuring delay between transmission of a signal, towards an object, modulated by a random binary waveform generated and receipt of reflection of the signal from the object.

Zscheile teaches method of detecting objects (see Fig.1) comprising measuring delay between transmission of a signal (21), towards an object (22), modulated by a random binary waveform generated (13) and receipt of reflection (24) of the signal from the object (note col.2, lines 58-69).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to combine the teaching of Zscheile and Glazer by applying the ranging apparatus taught by Zscheile using the random binary waveform of Glazer for the purpose of increasing the usage of the random binary waveform of Glazer and for the purpose of using the random binary waveform which is difficult to detect through increased randomness.

5. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schulz US 4,905,176 in view of Higuchi et al. US 6,167,037 and Glazer US 4,513,386.

Regarding claim 20, Schulz in view of Higuchi teach all subject matter claimed, as applied to claim 11. However, Schulz in view of Higuchi do not explicitly teach wherein the number of preliminary signals, including said first and further preliminary signals, is equal to 3 or 4.

Glazer teaches number of preliminary signals, including said first and further preliminary signals, is equal to 3 or 4 (see V_{IS} , V_{ZS} and V_{OS} in Fig.2).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to incorporate the teaching of Glazer in the system of Schulz by further through an AND gate (28 in Fig.2 of Glazer) coupled to the EXOR gate output of Schulz and the third preliminary signal, thus combining three preliminary signals for the purpose of producing a signal with further increased intervals between pulses, thus increase its randomness (note col.6, lines 59-65).

6. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schulz US 4,905,176 in view of Higuchi et al. US 6,167,037 and Zscheile, JR. et al. US 4,429,310 (Zscheile).

Regarding claim 21, Schulz in view of Higuchi teach all subject matter claimed, as applied to claim 11. However, Schulz in view of Higuchi do not explicitly teach a method of detecting objects comprising measuring delay between transmission of a signal, towards an object, modulated by a random binary waveform generated and receipt of reflection of the signal from the object.

Zscheile teaches method of detecting objects (see Fig.1) comprising measuring delay between transmission of a signal (21), towards an object (22), modulated by a random binary waveform generated (13) and receipt of reflection (24) of the signal from the object (note col.2, lines 58-69).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to combine the teaching of Zscheile and Schulz by applying the ranging apparatus taught by Zscheile using the random binary waveform of Schulz for the purpose of increasing the usage of the random binary waveform of Schulz and for the purpose of using the random binary waveform which is difficult to detect through increased randomness.

Allowable Subject Matter

7. Claims 1,4-6,9,10 and 13-17 are allowed.

8. The following is a statement of reasons for the indication of allowable subject matter:

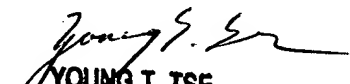
Present application discloses generating a random binary waveform from a physical noise source deriving a first and second preliminary signals to generate the random binary waveform. Prior art teaches or suggests in combination all the limitations claimed. However, prior art does not teach or suggest in combination the limitation of the physical noise source, which is a non-deterministic signal combined with another signal, which is a deterministic signal to produce the random binary waveform.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Ahn whose telephone number is (571) 272-3044. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sam K. Ahn
2/3/06


YOUNG T. TSE
PRIMARY EXAMINER